



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,927	01/24/2002	Brian S. Medower		4017

7590 02/06/2006
MacPherson Kwok Chen & Heid LLP
1762 Technology Drive
Suite 226
San Jose, CA 95110

EXAMINER

MAYES, MELVIN C

ART UNIT PAPER NUMBER

1734

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,927

Applicant(s)

MEDOWER ET AL.

Examiner

Melvin Curtis Mayes

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

(1)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(2)

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 depends from cancelled Claim 12.

Claim Rejections - 35 USC § 103

(3)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(4)

Claims 1-4, 6-11 and 13-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards 2001/0016301 in view of either Braitberg et al. 2002/0101816 or Pan et al. 4,960,680, further in view of either JP 3-86943 Abstract or Otoba et al. 2005/0089799.

Edwards discloses a method of making optical disk from a master comprising: providing a glass master substrate; depositing a photosensitive material (photoresist) on the substrate; exposing the material to laser on a recording table and developing (etching) the photosensitive

Art Unit: 1734

material to form grooves; forming a first stamper from the master disk; forming a second stamper from the first stamper; and forming replica disk from the second stamper by molding. The deposited photosensitive material and formed grooves may have a depth typically of between 50 and 120 nm. The replica disk may be optical data disk which include data pits, grooves, bumps or ridges and land or land areas and of various types of recordable optical disk such as phase change disk formats and has wide, flat smooth lands for positioning user recorded data thereon. Edwards discloses that the father stamper (first stamper) can be made from the master disk by electroforming using a nickel bath and a mother stamper (second stamper) can be made from the father stamper by electroforming using a nickel bath [0001]-[0075]. Edwards does not specifically disclose using the mother stamper (second stamper) to make a first surface optical disk of plastic material, deposited phase-change material and deposited dielectric layer over the phase change material and consisting of no further layers.

Braitberg et al. teach that one type of recordable optical data disk is a first surface medium which comprises a substrate 752 and a recording film 742 which defines the outermost surface of the disk by being placed directly on the substrate so that the read/write beam does not pass through any portion of the disk prior to reaching the recording film. The recording layer is made up of a single film and if desired, a thin coating of carbon or other wear resistant material can be positioned on the exterior surface of the film. The recording film can be formed of a number of materials including phase change material such as chalcogenide alloy (e.g., InSbSn) and the substrate may be of plastic such as injection molded polycarbonate. Particularly in the case of WORM media, the first surface storage can be maximally simple such as a recording layer and a single anti-reflective overcoat deposited on the disk. Braitberg et al. teach that a

Art Unit: 1734

dielectric film provides optical anti-reflection function by choosing the film's refractive index and thickness [0055], [0060]-[0062], [0069], [0104]-[0105].

Pan et al. teach that a write-once recordable optical element can comprise a substrate such as of polycarbonate, optical recording layer of SbInSn alloy and protective overcoat layer on the optical recording layer (col. 2-6).

JP 3-86943 Abstract (JP '943) teaches that optical recording medium is provided with high mechanical strength and peeling and cracking prevented by providing on at least one surface of the recording layer a protective film of silicon oxynitride.

Otoba et al. teach that the protective layer for protecting a recording layer of optical recording medium is preferably formed of a dielectric including a nitrogen oxide such as SiON [0193].

It would have been obvious to one of ordinary skill in the art to have modified the method of Edwards for making an optical disk such as recordable optical disk of phase change disk format by forming the disk by depositing phase-change material of SbInSn alloy directly on a molded polycarbonate replica disk, as Braitberg et al. or Pan et al. teach that a recordable optical disk can be made of an injection molded polycarbonate substrate on which is directly deposited a recording layer of SbInSn alloy. Depositing a dielectric layer of silicon oxynitride on the SbInSn alloy phase-change material would have been obvious to one of ordinary skill in the art, as Braitberg et al. or Pan et al. teach that a coating of wear resistant material, anti-reflective dielectric overcoat or protective overcoat is provided on the phase-change alloy, and either JP '943 or Otoba et al. teach that silicon oxynitride can be provided on the recording layer of optical recording medium to provide high mechanical strength and reduced peeling and cracking

Art Unit: 1734

or to provide a protective layer. The use of silicon oxynitride as the wear resistant material, the dielectric overcoat or the protective overcoat on the SbInSn alloy phase-change material on the polycarbonate substrate would have been obvious to one of ordinary skill in the art, as taught by JP '943 or Ootoba et al.

(5)

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 4, and further in view of Dobbin RE 34,506.

Dobbin teaches that for manufacturing an optical disc master, an alternative to the photoresist mastering system involves the use of a material which undergoes ablation when exposed to laser, the advantages over the photoresist process including reduction in process steps such as curing (exposing) and developing (etching) which results in less costly procedure and shorter completion time (Col. 2, lines 23-50).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined for making a first surface optical disk by providing the master with grooves using a photoresist material which undergoes laser ablation instead of using a photoresist material which undergoes exposing and etching, as taught by Dobbin, to reduce process steps which results in less costly procedure and shorter completion time. The use of photoresist material which undergoes laser ablation would have been obvious to one of ordinary skill in the art as an alternative to a photoresist which undergoes laser exposing and etching to form a master with less process steps, as taught by Dobbin.

Response to Arguments

(6)

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection, applied because of the amendments to Claims 1 and 19.

The method of Edwards is not limited to making any particular type of stamped disk but is disclosed for producing various formats of optical data disks including recordable phase-change formats. Recordable phase-change disks of substrate, phase-change material and wear-resistant or overcoat layer with no further layers are clearly taught by Braitberg et al. and Pan et al.

Conclusion

(7)

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takao et al. teach that a protective layer can be provided between the substrate and recording layer or on the active layer of a recordable optical medium.

EP 0 945 860, JP 3-97132, JP 3-283113, JP 3-242266 and Ide et al. 5,736,657 teach the use of SiON as a protective or wear resistant layer.

(8)

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1734

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

(9)


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1734

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
February 1, 2006